ABSTRACT

Certain embodiments of the present invention relate to a method for manufacturing a semiconductor chip, a method for manufacturing a semiconductor device, a semiconductor chip, a semiconductor device, a connection substrate and an electronic apparatus, in which semiconductor chips stacked in layers are electrically connected to one another without using wires. In one embodiment, after an electrode 18 is formed on a surface 16 of a first semiconductor chip 12, a hole 26 is formed from an opposite surface 24 thereof until a tungsten layer 20 of the electrode 18 is exposed. A protrusion 30 is formed by etching on a surface 31 of a second semiconductor chip 14 and thereafter an abutting electrode 32 is formed on an apex section of the protrusion 30. The first semiconductor chip 12 and the second semiconductor chip 14 are stacked on top of the other such that the abutting electrode 32 contacts the electrode 18. As a result, the path between the electrodes becomes shorter and therefore signal delays are inhibited or prevented. Also, there are no restrictions on the area of semiconductor chips to be stacked. As a result, semiconductor chips having the same area can be stacked in layers, and thus the size of the semiconductor device 10 can be reduced.